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INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification : Not classified	A1	(11) International Publication Number: WO 00/03581 (43) International Publication Date: 27 January 2000 (27.01.00)
(21) International Application Number: PCT/GB99/02301 (22) International Filing Date: 15 July 1999 (15.07.99) (30) Priority Data: 9815666.4 17 July 1998 (17.07.98) GB (71) Applicant (for all designated States except US): SMITHKLINE BEECHAM P.L.C. [GB/GB]; New Horizons Court, Brentford, Middlesex TW8 9EP (GB). (72) Inventors; and (75) Inventors/Applicants (for US only): BARTON, Barry [GB/GB]; SmithKline Beecham Pharmaceuticals, Clarendon Road, Worthing, West Sussex BN14 8QH (GB). MCNAUGHTON, Heather, Jane [GB/GB]; Dyson Perrins Lab, South Park Road, Oxford OX1 3QY (GB). SCHOFIELD, Christopher, Joseph [GB/GB]; Dyson Perrins Lab, South Park Road, Oxford OX1 3QY (GB). THIRKETTLE, Jan, Edward [GB/GB]; SmithKline Beecham Pharmaceuticals, New Frontiers Science Park South, Third Avenue, Harlow, Essex CM19 5AW (GB). (74) Agent: GIDDINGS, Peter, John; SmithKline Beecham, Corporate Intellectual Property, Two New Horizons Court, Brentford, Middlesex TW8 9EP (GB).		(81) Designated States: CA, JP, US, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published <i>With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>
(54) Title: PROCESS FOR PREPARING CLAVAM DERIVATIVES BY USING POLYPEPTIDES HAVING BETA-LACTAM SYNTHETASE ACTIVITY		
(57) Abstract A process for the synthesis of clavam compounds, in particular clavulanic acid using β -lactam synthetase polypeptides and β -lactam synthetase polynucleotides.		

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/GB 99/02301

A. CLASSIFICATION OF SUBJECT MATTER

IPC6: C12P 17/10

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC6: C12P

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X,P	Chem. Commun., Volume 21, 1998, Heather J. McNaughton et al, "Beta-Lactam synthetase: implications for beta-lactamase evolution" page 2325 - page 2326 --	1-14
X,P	Proc. Natl. Acad. Sci., Volume 95, August 1998, Brian O. Bachmann et al, "Beta-Lactam synthetase: A new biosynthetic enzyme" page 9082 - page 9086 --	1-14
X	CA 2108113 A (GOVERNORS OF THE UNIVERSITY OF ALBERTA), 9 April 1995 (09.04.95) --	12-13



Further documents are listed in the continuation of Box C.



See patent family annex.

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Date of the actual completion of the international search

5 November 1999

Date of mailing of the international search report

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INTERNATIONAL SEARCH REPORT

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PCT/GB 99/02301

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>WO 9412654 A1 (SMITHKLINE BEECHAM PLC), 9 June 1994 (09.06.94)</p> <p style="text-align: center;">-- -----</p>	1-14

S. 242849

INTERNATIONAL SEARCH REPORT

Information on patent family members

28/09/99

International application No.

PCT/GB 99/02301

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
CA 2108113 A	09/04/95	NONE	
WO 9412654 A1	09/06/94	AU 5570194 A	22/06/94
		DE 69324163 D,T	23/09/99
		EP 0673432 A,B	27/09/95
		ES 2130392 T	01/07/99
		JP 8504579 T	21/05/96
		US 5869299 A	09/02/99



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